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**Memorandum**

June 30, 2006

**TO:** Honorable Susan A. Davis  
Attention: Todd Houchins

**FROM:** David M. Bearden  
Analyst in Environmental Policy  
Resources, Science, and Industry Division

**SUBJECT:** Cleanup of Fuel Tank Leaks at Naval Base Point Loma

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This memorandum responds to your request that the Congressional Research Service (CRS) provide information on the cleanup of fuel leaked from storage tanks at Naval Base Point Loma, and examine issues relevant to the cleanup. The Navy has begun to assess the fuel tank leaks, and reports that the leaked fuel has migrated through groundwater beyond the facility boundary. Interim efforts are underway to pump out the leaked fuel from the groundwater, but final cleanup decisions will not be made until the migration of the contamination is better understood and actions to fully address it are identified. The residential community bordering the facility has expressed concern about potential health risks from possible exposure to the leaked fuel. There also have been concerns among residents about the potential effect of the disclosure of the fuel tank leaks on property values.

As you requested, this memorandum provides a brief description of the facility, summarizes the Navy's findings about the nature of the fuel tank leaks, discusses potential risks to human health and the environment, identifies possible cleanup authorities, indicates the status of the cleanup and funding so far, reviews relevant legislation in the 109<sup>th</sup> Congress, and examines issues pertinent to completing the cleanup. I hope this information is useful. If you need further assistance, you may contact me at 7-2390.

### **Facility Description**

Naval Base Point Loma occupies approximately 316 acres on San Diego Bay in California. The primary mission of the installation is to support the day-to-day operation of the Naval fleet in the Southwest United States. Several Naval commands and facilities are located on the installation.<sup>1</sup> The Fleet and Industrial Supply Center is located in the northeastern corner of Naval Base Point Loma, and operates a fuel tank "farm" for the

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<sup>1</sup> For information on the Naval commands and facilities stationed at Naval Base Point Loma, see the Navy's Southwest Region web site at: [<http://www.cnrsw.navy.mil/subbase2/index.asp>].

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Defense Energy Support Center, a division of the Defense Logistics Agency.<sup>2</sup> The fuel tank farm is referred to as the Point Loma Defense Fuel Support Point, and supplies fuel for military operations in the region. The tank farm consists of 20 underground storage tanks and 11 above ground storage tanks, constructed between 1917 and 1954. The tanks have a combined capacity of 1.2 million barrels, and currently store “jet-propellant 5” (JP5) jet fuel and marine diesel fuel (“Diesel Fuel Marine” or DFM in Navy parlance), according to Navy Southwest Region information.

## Fuel Tank Leaks

Based on information CRS obtained from Navy and state officials,<sup>3</sup> nearly 500,000 gallons of fuel are known to have leaked from storage tanks at the Point Loma Defense Fuel Support Point. At least 3 of the above ground tanks have leaked 410,000 gallons of fuel since 1999, consisting primarily of JP5 and DFM. These tanks were constructed more than 70 years ago, and had an expected operational life of 50 years. The Navy suspects that the leaks occurred as a result of the structural deterioration of the riveted bottoms of the tanks over time. The Navy also has recorded 30 other instances since 1993, in which various fuel tanks at the facility have leaked, resulting in the release of an additional 85,000 gallons. The Navy did not specify whether these tanks were above ground or underground.

The leaked fuel has contaminated the soil beneath the tanks. Sampling of groundwater from monitoring wells indicates leaked fuel has migrated through the soil to groundwater 50 feet beneath the surface. Although 500,000 gallons of fuel are *known* to have leaked, the Navy indicates that the size of the plume of leaked fuel in the groundwater suggests that as much 1.5 million gallons may have leaked from the tanks over time. The Navy reports that, because of its physical consistency, the leaked fuel does not appear to have dissolved in groundwater, but that it is “floating” above the water table because of its lighter density.<sup>4</sup> The fuels also contain various chemical additives designed to improve performance. Whether denser, and more soluble, chemical additives may have separated out from the fuel and mixed more readily with the groundwater is uncertain.

Initial monitoring data indicated that the leaked fuel was migrating along the top of the water table eastward toward the bay. Efforts to pump out the leaked fuel appear to have stopped migration in this direction, according to Navy and state officials. More recent data indicate that the leaked fuel also has migrated northward beyond the facility boundary toward the adjacent residential community, raising the above-mentioned concerns about health risks

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<sup>2</sup> The Defense Logistics Agency is the entity within the Department of Defense responsible for providing logistical support for the day-to-day operations of the Army, Navy, and Air Force, including the purchase of materials and services. The Defense Logistics Agency administers numerous “business units,” including the Defense Energy Support Center, which is responsible for purchasing fuels for use in military vessels, aircraft, and vehicles. For more information, see the Center’s web site at: [<http://www.desc.dla.mil>].

<sup>3</sup> CRS obtained information on the fuel tank leaks from a telephone conversation with installation officials on March 8, 2006; presentations by Navy and state officials of the San Diego Regional Water Quality Control Board at a community meeting on March 20, 2006; and telephone conversations with state officials of the Regional Board on March 7, 2006, and June 15, 2006.

<sup>4</sup> The leaked fuels are non-aqueous phase liquids (NAPLs) that do not readily mix with water. They are light NAPLs typically less dense than water, and as a result, tend to suspend (i.e. float) on the surface rather than mix with water.

and potential effects on property values. The Navy is in the process of assessing the extent to which off-site migration has occurred, discussed later in this memorandum in the section on “Status of Cleanup.”

## Potential Risks to Human Health and the Environment

Exposure to the type of fuels leaked from the tanks potentially can cause various health effects depending on numerous factors, including the concentration and duration of exposure, the route or “pathway” of exposure (inhalation, ingestion, or skin contact), and individual characteristics, such as age and state of health at the time of exposure. According to the Agency for Toxic Substances and Disease Registry (ATSDR), some of the possible health effects of exposures to fuels above certain concentrations include various types of distress to the digestive, respiratory, and nervous systems, and skin irritations.<sup>5</sup> Whether exposure to these fuels can cause cancer in humans appears uncertain. However, the ATSDR noted that some scientists have concluded that heavy fuel oils, such as marine diesel fuel, are possibly carcinogenic to humans.<sup>6</sup> The ATSDR also noted that chemical additives in fuel oils can cause other health effects, depending on the particular chemical, exposure, and individual characteristics cited above.

Based on the information provided to CRS, the contaminated groundwater (the aquifer) is not used for drinking purposes, and the Navy’s efforts to pump out the leaked fuel appear to have prevented migration into the bay so far. Future exposure from drinking contaminated groundwater does not appear likely, because the groundwater is not a source of potable water, as is typical of groundwater located in close proximity to saltwater. However, there have been public concerns that some of the leaked fuel migrating eastward might not be recovered and eventually could be discharged into the bay, presenting risks to swimmers, the marine environment, and those who may consume contaminated fish. Community members also have expressed concern that fuel vapors may migrate through the soil to the surface and into the ambient air, presenting a pathway of exposure through inhalation. As the water table is relatively deep, the migration of fuel vapors to the surface appears unlikely. The possibility of such migration would depend on the porosity of the surface and subsurface soils, and whether any geological fractures may exist to allow migration to the surface to occur more readily.

## Cleanup Authorities<sup>7</sup>

Public concerns about potential risks have prompted questions about the extent to which the Navy will be required to clean up the leaked fuel. Several federal environmental laws require polluters to clean up contamination, and these provisions generally apply to federal facilities, including military installations, to the same extent as other entities. The

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<sup>5</sup> U.S. Department of Health and Human Services. Public Health Service. Agency for Toxic Substances and Disease Registry. *Toxicological Profile for Fuel Oils*. June 1995. See the agency’s web site for the full text at: [<http://www.atsdr.cdc.gov/toxprofiles/tp75.html>].

<sup>6</sup> Ibid.

<sup>7</sup> This section discusses authorities that generally apply to the cleanup of petroleum and fuel oils, and does not constitute a legal analysis of their applicability to a particular situation, such as the fuel tank leaks at Point Loma. Rather, it identifies possible cleanup authorities in such situations, depending on interpretation.

applicability of an individual statute to a particular site depends on numerous factors, including the type of substance involved, the circumstance in which contamination resulted from the release or discharge of that substance into the environment, and whether that substance is present in soil, groundwater, surface water, or ambient air.

The specific federal or state statutory authority and requirements for the cleanup of a particular site affect how the cleanup is administered and enforced. However, such response authorities typically express the broad goal of protecting human health and the environment, and do not stipulate specific cleanup actions. Rather, the required stringency of cleanup is site-specific and depends largely on exposure risks at that particular site. In practice, federal and state agencies that enforce environmental laws generally require less stringent cleanup at sites where the risks of exposure are lower, and vice versa.

Authority for the federal government to clean up petroleum and fuel oils is provided in multiple federal statutes. For example, Section 311(c) of the Clean Water Act provides authority for the President to respond to a discharge of oil or a hazardous substance into or on the “navigable” surface waters of the United States, and for mitigation or prevention of a substantial threat of a discharge into or on such waters.<sup>8</sup> Oil is defined in that statute to include petroleum and fuel oils,<sup>9</sup> such as those that leaked from the storage tanks at Point Loma. Discharge is defined to include “leaking”.<sup>10</sup> Under the Clean Water Act, the President has delegated the responsibility to respond to a discharge to one or more federal agencies.<sup>11</sup>

Section 9003(h) of the Resource Conservation and Recovery Act (RCRA) authorizes the Environmental Protection Agency (EPA) specifically to respond to petroleum leaks from *underground* storage tanks.<sup>12</sup> A tank is considered underground for the purposes of this statute if at least 10 percent of the volume of the tank (including the volume of pipes connected to it) is beneath the surface of the ground.<sup>13</sup> Consequently, the vast majority of a tank can be above ground and be regulated under RCRA as an underground tank. States that administer authorities in RCRA for regulating underground tanks enter into a cooperative agreement with EPA.<sup>14</sup> Many states, including California, have underground storage tank regulations that are stricter and/or more comprehensive than federal requirements.

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<sup>8</sup> 33 U.S.C. 1321(c). Federal response authority in this section also applies to discharges on shorelines adjoining navigable waters, and into or on the waters of the U.S. Exclusive Economic Zone (EEZ). The outer boundary of the EEZ is 200 nautical miles seaward of the baseline from which the territorial sea is measured. This authority also applies to discharges that “may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States.”

<sup>9</sup> 33 U.S.C. 1321(a)(1).

<sup>10</sup> 33 U.S.C. 1321(a)(2).

<sup>11</sup> Executive Order 12777 (1991), as amended, specifies the delegation of Presidential authority in Section 311 of the Clean Water Act to federal agencies.

<sup>12</sup> 42 U.S.C. 6991b(h).

<sup>13</sup> 42 U.S.C. 6991(1).

<sup>14</sup> 42 U.S.C. 6991b(h)(7).

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly referred to as Superfund) also provides authority for the federal government to clean up, and to require cleanup of, hazardous substances, pollutants, or contaminants.<sup>15</sup> However, CERCLA explicitly excludes petroleum from the definition of contaminant,<sup>16</sup> and also from the definition of pollutant<sup>17</sup> and hazardous substance.<sup>18</sup> Thus, cleanup of petroleum is not addressed under this statute.

Relatedly, Section 1431 of the Safe Drinking Water Act grants EPA emergency authority to respond to risks from contaminants that are present in, or likely to enter, underground sources of drinking water and public water supplies, if they present an imminent and substantial endangerment to human health.<sup>19</sup> The term “contaminant” is defined broadly in that statute to include “any physical, chemical, biological, or radiological substance or matter in water.”<sup>20</sup> This emergency response authority is provided to EPA in the event that state and local authorities have not taken action to protect human health.

In the case of Point Loma, the consumption of contaminated groundwater is not expected, since it is not a source of potable water and is therefore not used for drinking purposes. Consequently, Safe Drinking Water Act authorities presumably would not apply to the tank leaks. As CERCLA excludes petroleum, it presumably would not apply either. However, if the leaked fuel were to migrate through groundwater into San Diego Bay, it is possible that a court might hold that the leak constitutes a discharge into the navigable waters of the United States.<sup>21</sup> If so, response authority in Section 311(c) of the Clean Water Act arguably would apply to the Navy’s efforts to prevent migration into the bay.

The Navy reports that the known releases of fuel resulted from leaking *above* ground tanks. However, if the base of those tanks and connected piping are far enough beneath the surface to be considered underground for regulatory purposes,<sup>22</sup> the Navy may be required to carry out corrective actions under Section 9003(h) of RCRA, or state law discussed below. There also are numerous tanks at Point Loma that are mostly or entirely underground. Considering the estimated size of the plume of fuel in the groundwater is larger than can be explained by the known releases, some of these tanks could possibly have contributed to the fuel leaks, in which case authorities in RCRA more clearly may apply.

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<sup>15</sup> 42 U.S.C. 9604(a). CERCLA authorizes the President to respond to a release or threatened release of a hazardous substance into the environment, or a release or threatened release of a pollutant or contaminant into the environment which may present an imminent and substantial danger to the public health or welfare. The President has delegated this authority to one or more federal agencies, as provided in Executive Order 12580 (1987), as amended.

<sup>16</sup> 42 U.S.C. 9601(33).

<sup>17</sup> *Ibid.*

<sup>18</sup> 42 U.S.C. 9601(14).

<sup>19</sup> 42 U.S.C. 300i.

<sup>20</sup> 42 U.S.C. 300f(6).

<sup>21</sup> Clean Water Act applicability to discharges into groundwater that migrate into surface waters is a significant issue that has long divided the courts.

<sup>22</sup> CRS was not able to confirm whether, and if so what portion of, the above ground tanks and connected piping may be beneath the surface.

Most states also have enacted requirements for responsible parties to remediate contamination within their borders, including fuel spills and leaks. Federal environmental laws typically stipulate how they relate to state laws, and some federal environmental laws authorize EPA to delegate oversight and enforcement authority to the states. In many cases, the federal government defers to the states to oversee cleanup with federal or state authorities, depending on the statute and certain conditions, such as those in RCRA noted above. So far, the Department of Defense is the only federal entity involved in the cleanup of the fuel tank leaks at Point Loma. The San Diego Regional Water Quality Control Board, a state agency, has taken the lead in overseeing the Navy's cleanup, and has cited<sup>23</sup> the State of California's Porter-Cologne Water Quality Control Act as one of the primary state authorities over this activity.<sup>24</sup>

The Porter Act requires the reporting of the discharge of oil or petroleum into or on the waters of the state,<sup>25</sup> including groundwater.<sup>26</sup> The Navy complied with this requirement in its reporting of the fuel tank leaks to the Regional Board. The Porter Act also authorizes the state to issue an enforcement order to require cleanup of waste discharged into the waters of the state.<sup>27</sup> Although the Regional Board has interpreted waste to include fuel leaked from storage tanks,<sup>28</sup> the Porter Act does not explicitly define waste to include leaked fuel that had been intended for use rather than for disposal.<sup>29</sup> The Regional Board reports that it is satisfied with the cleanup actions that the Navy has taken so far, and therefore, has not issued an enforcement order under the Porter Act for the cleanup.<sup>30</sup> If disagreement over the cleanup were to arise in the future, the lack of explicit authority in the aforementioned provisions of the Porter Act to enforce the state's preferred action could be an issue.

The Regional Board also has cited the State of California's underground storage tank regulations as being applicable to the cleanup. As explained above, it is possible that some of the underground tanks may have leaked, considering that the plume is larger than can be explained by the known releases from the above ground tanks. However, the applicability of these state regulations to the above ground tanks would depend on whether those tanks could be considered underground tanks for regulatory purposes, as is the case with similar federal authorities in RCRA. California state law defines an underground tank as a tank, and connected pipes, that are "substantially" or "totally" beneath the surface.<sup>31</sup> CRS was not able

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<sup>23</sup> The Regional Board cited state authorities for the cleanup of the fuel tank leak in a presentation delivered at a community meeting on March 20, 2006.

<sup>24</sup> Section 313 of the Clean Water Act specifies that federal facilities are subject to state and local water pollution control requirements to the same extent as non-federal entities (33 U.S.C. 1323).

<sup>25</sup> California Water Code, Division 7, Section 13272.

<sup>26</sup> *Ibid.*, Section 13050(e).

<sup>27</sup> *Ibid.*, Section 13304.

<sup>28</sup> Information obtained in a written communication from the San Diego Regional Water Quality Control Board, June 15, 2006.

<sup>29</sup> California Water Code, Division 7, Section 13050(d).

<sup>30</sup> Information obtained in a telephone conversation with state officials of the San Diego Regional Water Quality Control Board, June 15, 2006.

<sup>31</sup> California Health and Safety Code, Division 20, Chapter 6.7, Section 25281(y).

to confirm whether the state has determined the extent to which the above ground tanks and piping may be beneath the surface to constitute substantial for state regulatory purposes.

## Status of Cleanup

Based on information CRS obtained from Navy and state officials,<sup>32</sup> the assessment of the fuel tank leaks began in February 2001, with oversight by the San Diego Regional Water Quality Control Board, as noted above. The Navy is administering the cleanup of the leaked fuel independently from its Installation Restoration Program, which addresses cleanup of a wide variety of contamination but not fuel spills or leaks.<sup>33</sup> So far, the Navy has installed a system of monitoring wells to better understand the amount of fuel that has leaked and the extent to which it has seeped into the soil and migrated through the groundwater. The Navy has connected these wells to a fuel recovery system to begin pumping out the leaked fuel from the top of the water table. The Navy also has emptied and cleaned some of the tanks that are known to have leaked. Once the plume of leaked fuel is sufficiently identified, and the potential for exposure is fully assessed, the Navy will determine how extensive the cleanup will be to address potential risks. The Navy has not estimated a time frame for the completion of these actions. In the meantime, the Navy plans to continue pumping out the leaked fuel as an interim measure.

The Navy and the Regional Board report that efforts to recover the leaked fuel have prevented migration eastward into the bay, but that migration northward toward the adjacent community appears to continue. Monitoring is planned beyond the facility boundary to gain a better understanding of this migration and how to address it. The Navy plans to connect any off-site monitoring wells to the interim fuel recovery system to pump out the leaked fuel that may be migrating toward the community. Off-site monitoring of surface soils is also planned to ascertain whether fuel vapors are being released into the air, and whether they present a pathway of human exposure.

Integral to the cleanup is the replacement of the fuel tanks to address any continuing and future leaks. Otherwise, continued use of the tanks could result in additional contamination and necessitate a more extensive cleanup.<sup>34</sup> The Navy has budgeted \$115 million to replace the existing riveted tanks with welded steel tanks that are less prone to leakage. The project is scheduled to begin in FY2008. Some residents have expressed concern that this schedule could allow additional fuel to leak from the existing tanks if they remain in use, and have urged that the replacement be accelerated. The availability of funding to speed up the project

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<sup>32</sup> CRS obtained information on the status of the cleanup of the fuel tank leaks at Naval Base Point Loma from a telephone conversation with installation officials on March 8, 2006; presentations by Navy and state officials of the San Diego Regional Water Quality Control Board at a community meeting on March 20, 2006; and telephone conversations with state officials of the Regional Board on March 7, 2006, and June 15, 2006.

<sup>33</sup> The Navy administers an Installation Restoration Program at Naval Base Point Loma specifically to address cleanup authorized under CERCLA, which generally excludes petroleum, including fuel oils, as explained earlier in this memorandum. For information on the status of cleanup at Point Loma administered under the Installation Restoration Program, see the Navy's web site at: [<http://environ.spawar.navy.mil/NBPLIRP>].

<sup>34</sup> CRS was not able to verify whether any of the tanks known to have leaked will remain in use until they are replaced.

is subject to annual appropriations by Congress, and budgetary discretion that the Department of Defense may have to allocate these funds among competing needs.

## Funding

Although the Navy is administering the cleanup of the leaked fuel, the Defense Energy Support Center, which operates the tank farm, is paying for it. This arrangement is stipulated in Defense Logistics Agency policy, which requires the military branch administering an installation to be responsible for responding to fuel spills on that installation, and requires the Defense Energy Support Center to reimburse that military branch for its response costs.<sup>35</sup> As indicated in the table below, the Navy reports that it has spent a total of \$5.5 million in Defense Energy Support Center funds from February 2001 through June 2006, for the assessment and cleanup of the fuel tank leaks at Point Loma.

### DOD Expenditures for the Assessment and Remediation of Fuel Tank Leaks at Point Loma from February 2001 to June 2006

Time Frame	Funding	Activity
February 2001 to September 2003	\$2,043,000	U.S. Army Corps of Engineers “rapid response” contract for remediation of petroleum releases.
October 2003 to June 2006	\$3,017,980	Defense Energy Support Center environmental services contract for assessment and remediation of petroleum releases.
February 2006 to June 2006	\$485,155	U.S. Army Corps of Engineers contract for cleaning and inspection of additional tanks suspected of leaking.
<b>Total Expenditures</b>	<b>\$5,546,135</b>	<b>All assessment and remediation efforts.</b>

**Source:** Prepared by CRS with information from the U.S. Navy, Office of Legislative Affairs, provided in written communication on June 23, 2006.

The Defense Logistics Agency reports that it is funding the cleanup of the fuel tank leaks at Point Loma with “revenues” from fuel “sales” to the military branches from the tank farm at that installation. These revenues are deposited into a Defense Working Capital Fund that pays for the purchase of fuel for future military use, and the operation and maintenance of the tank farm to supply this fuel to the services. These funds are not revenues in the conventional sense, but are a transfer of appropriations within the Department of Defense’s budget and not an independent funding source.<sup>36</sup> As such, funding for the Navy’s cleanup of the fuel tank leaks ultimately is subject to annual appropriations by Congress, specifically

<sup>35</sup> See the Defense Logistics Agency’s web site for its policy regarding administering and paying for response to fuel spills and leaks: [<http://www.desc.dla.mil/DCM/DCMPPage.asp?pageid=59>].

<sup>36</sup> In the case of Naval Base Point Loma, the Defense Fuel Support Point located at that installation purchases fuel for military use out of congressional appropriations to the Defense Logistics Agency and budgeted to the Defense Energy Support Center. The military branches transfer congressional appropriations from their accounts to the Defense Logistics Agency to “pay” for the fuels they use.

the amounts provided for the Defense Logistics Agency accounts that support the Defense Working Capital Fund.

## **Legislation in the 109<sup>th</sup> Congress**

In response to public concerns, the cleanup of the leaked fuel and the replacement of the tanks have received attention in the second session of the 109<sup>th</sup> Congress. The House Armed Services Committee reported the National Defense Authorization Act for FY2007 (H.R. 5122, H.Rept. 109-452) on May 5, 2006, and the full House passed the bill, as amended, on May 11, 2006. In its report on the bill, the House Armed Services Committee expressed the following concerns:

The committee is concerned about the fuel tank leakage at the Defense Energy Support Center (DESC) Fuel Storage Point (DFSP) at Naval Base Point Loma, California. Data from recent monitoring of the ground soil indicate that the leakage is more extensive than originally estimated. In addition to ongoing mitigation efforts, the committee is aware that the DESC has a military construction project in the fiscal year 2008 Future Years Defense Program that would replace all existing bulk storage infrastructure with modern, Department of Defense-standard storage tanks and support equipment. The committee notes that the DFSP is part of the strategic reserve, and its capabilities and readiness are matters of national security. The committee expects the Navy and the DESC to expedite to the furthest extent practicable their clean up actions, and to continue an ongoing dialogue about data, findings, and status with the congressional defense committees and the local community. (H.Rept. 109-452, page 292.)

As noted in title III, the committee is concerned about the fuel tank leakage at the Defense Energy Support Center (DESC) Fuel Storage Point (DFSP) at Naval Base Point Loma, California. Although DESC has a military construction project in the fiscal year 2008 Future Years Defense Program (FYDP) to replace existing bulk storage infrastructure with modern tanks and support equipment, the committee notes that the Department of Defense has a history of annually deferring projects within the FYDP due to budgetary pressures. The committee believes the construction project to address the fuel leakage at Naval Base Point Loma to be of utmost importance and urges the Secretary of Defense to ensure that the project remains programmed for fiscal year 2008. (H.Rept. 109-452, page 434.)

## **Issues Relevant to the Completion of the Cleanup**

The amount of funding needed to complete the cleanup of the fuel tank leaks at Point Loma will remain uncertain, until the migration of the leaked fuel is better understood and response plans to prevent potential risks are finalized. The pace of the cleanup will depend on the availability of Defense Energy Support Center funds to pay for it, subject to annual appropriations by Congress. The technical capacity to recover the leaked fuel from the groundwater is another factor that will determine how quickly the cleanup can be performed. The cleanup also could become more challenging, and require more funding and time, if chemical additives have separated out from the fuel and require other remediation, in addition to pumping the leaked fuel off the top of the water table.

Other issues concern the planned replacement of the tanks, essential to address the source of the contamination to prevent future leaks. Whether any of the leaking tanks will remain in use until the tanks are replaced, and for how long, is a critical issue. How quickly the tanks can be replaced, again depends on the availability of appropriations by Congress, and the capacity to install the new ones in a timely manner. CRS was not able to verify

whether all of the old tanks will be removed, or simply cease to be used, raising questions as to whether contaminated soil beneath the old tanks will be cleaned up if those tanks are removed, and whether measures will be in place to prevent exposure to fuel vapors that may be released into the air from the saturated soil if those tanks are removed.

Although many uncertainties surround the completion of the cleanup, the information provided to CRS does not indicate any immediate health or environmental risks from exposure to contaminated groundwater. As the aquifer is not used for drinking water, the possible migration of fuel into the bay, and the possible migration of fuel vapors to surface soils, appear to be the mostly likely pathways of exposure. Until the leaked fuel is recovered, monitoring likely will be needed to ensure the continued effectiveness of efforts to prevent migration into the bay, and that fuel vapors are not being released into the air. Specific details about the Navy's plans to complete the cleanup of the leaked fuel are likely needed to address the wide array of community concerns.